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GB 2132570 A GB 0713638 A US 4768806 A
US 4175768 A

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(54) **Collapsible road trailer**

(57) A collapsible rigid walled (14) road trailer with two peripheral wheels (11) and a rectangular boxlike body. The two part floor (13a, b) of the trailer being hinged along its longitudinal axis and the side walls hinged with respect to the floor such that in its collapsed state, when viewed end on, a compact 'W' shape is formed. The wheels (11), which are attached to the sidewalls, remain parallel to the long axis of the trailer and each other. The end walls are demountable and may be stored between the floor and sidewalls when the trailer is collapsed.

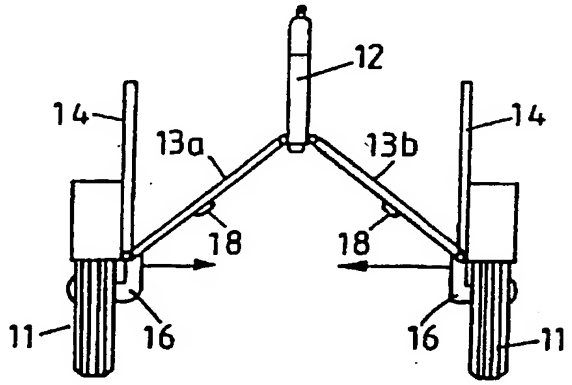

FIG.4.

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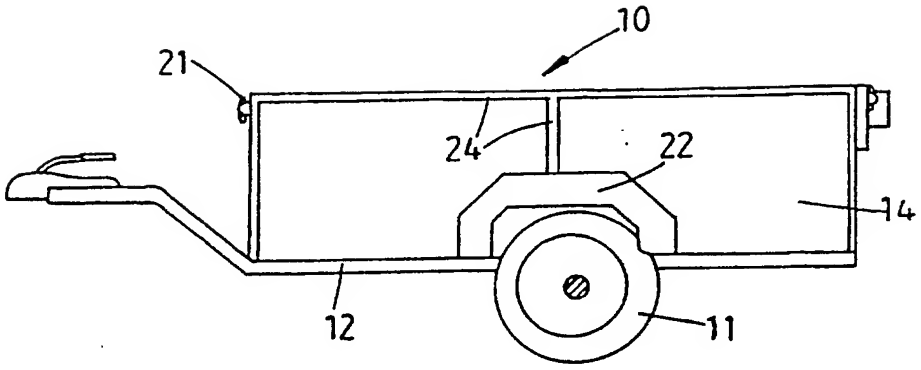


FIG.1.

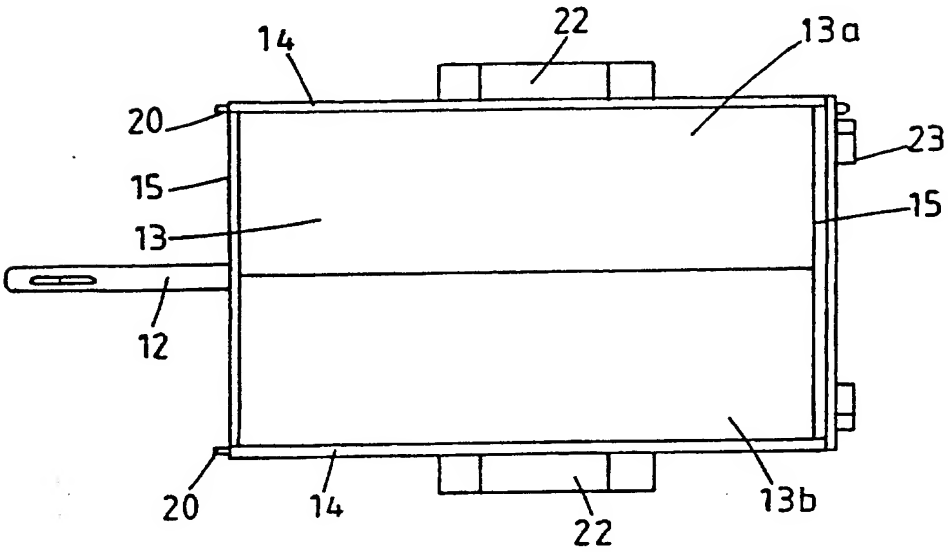


FIG.2.

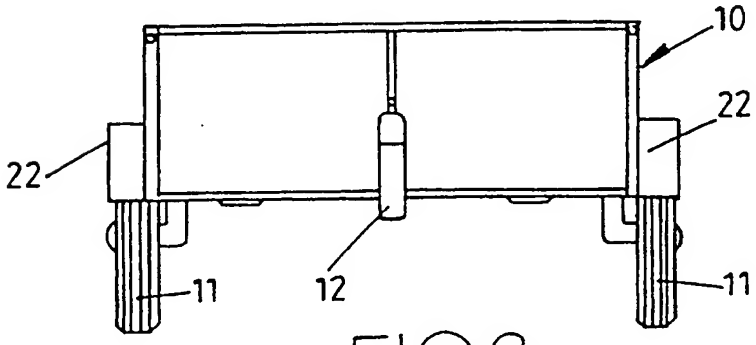


FIG.3.

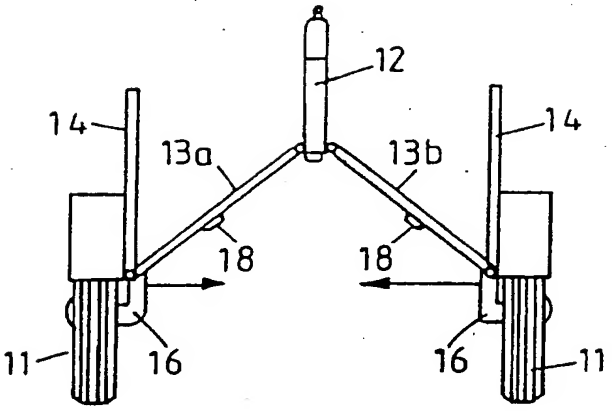


FIG.4.

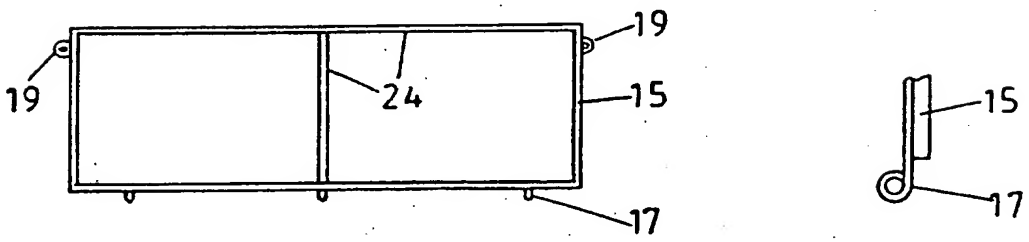
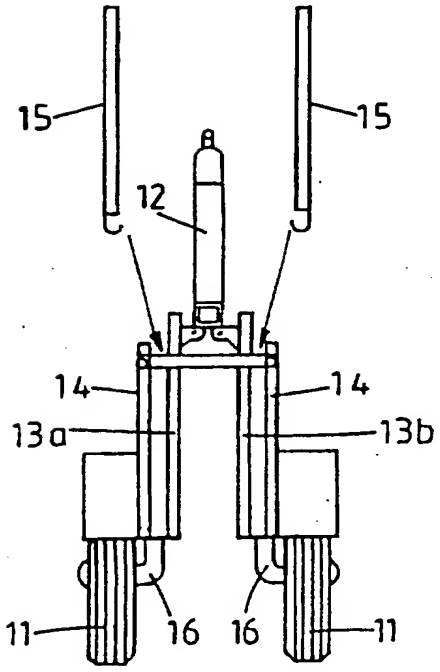


FIG.5.



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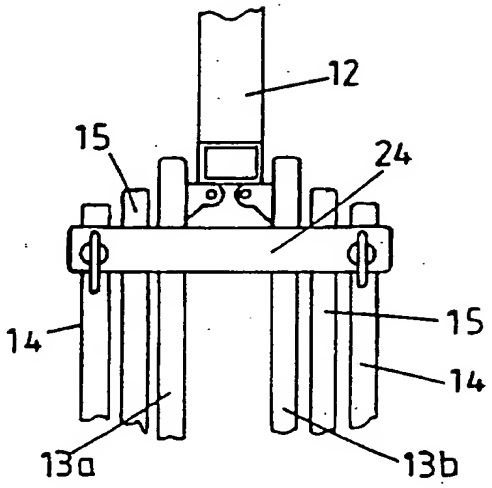

FIG.7.

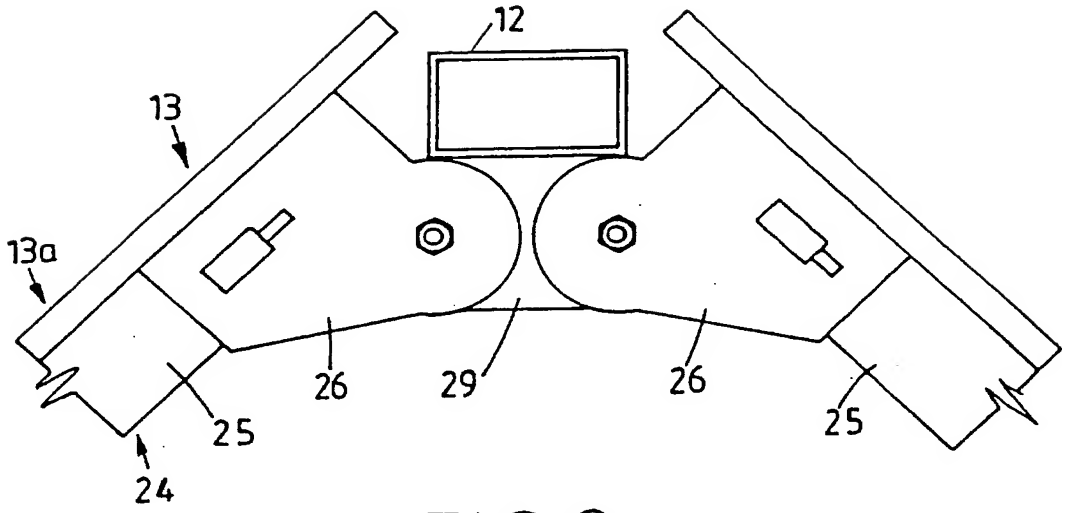

FIG.8.

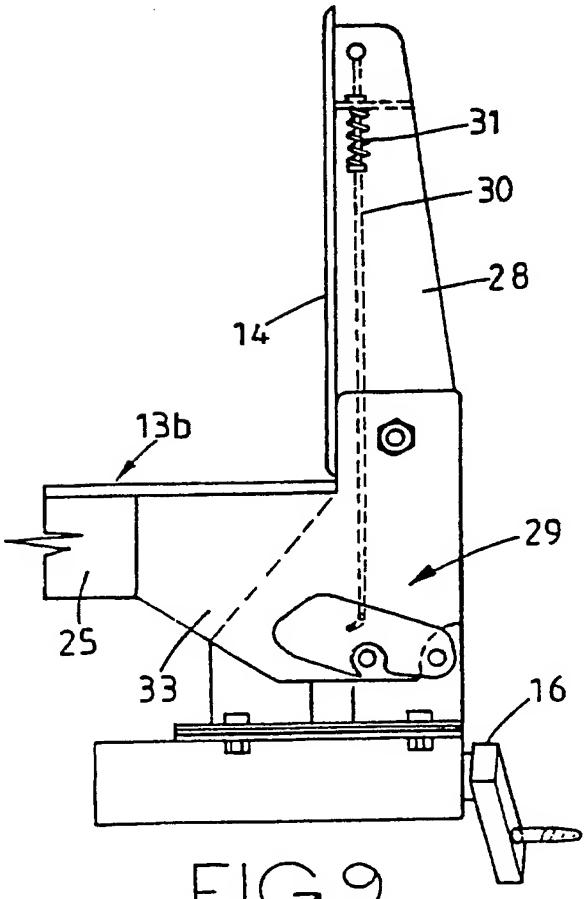

FIG.9.

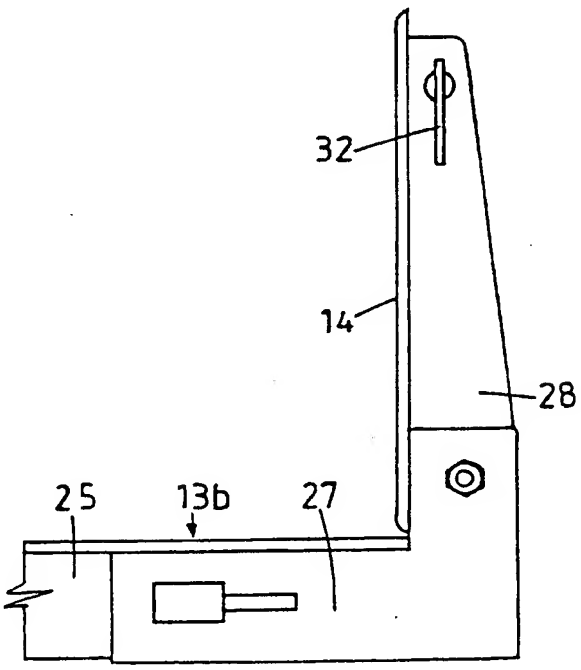

FIG.10.

ROAD VEHICLE TRAILER

This invention relates to a road vehicle trailer and more particularly, but not necessarily exclusively, to a trailer suitable for towing by cars.

Road vehicle trailers are difficult to store and often have to be left outside, where they are exposed to the elements and at risk of being stolen, when not in use.

The present invention seeks to provide a road vehicle trailer which can be more easily stored.

According to the present invention, there is provided a road vehicle trailer comprising a body, at least two ground engageable wheels and means for connecting the trailer to a road vehicle, the body comprising a base, two side members extending in the intended direction of movement of the trailer and at least one end member extending between the two side members wherein the side members are pivotable relative to the base member and the base member is formed in two parts pivotable relative to one another so that the two parts of the base member can be folded to lie, at least in part, between the two side members.

Preferably, the two side members and the two parts of the base lie in substantially parallel planes when the trailer is in a collapsed condition.

Preferably, said at least one end member is releasably connectible to the

base and the side members to support the trailer in an erected condition with the two parts of the base coplanar or substantially coplanar and the two side members in planes perpendicular or substantially perpendicular to the base.

Preferably, there are two end members releasably connectible to the base and side members and, in this case, at least one of the end members is preferably pivotable relative to the base member between a raised position in which it closes one end of the trailer and a lowered position in which said one end of the trailer is open.

The means for connecting the trailer to a road vehicle may comprise a tow bar which extends forwardly from one end of the trailer. In this case, the tow bar may also extend substantially the length of the trailer and the two base parts may be independently pivotally connected to the tow bar.

Preferably, the ground engageable wheels lie in two spaced apart, substantially parallel, planes both when the trailer is in an erected condition and a collapsed condition.

Conveniently, the end member can be stored between a side member and an adjacent base part when the trailer is in a collapsed condition.

Preferably, means are provided for connection between the two side members to releasably hold the trailer in a collapsed condition.

Advantageously, the width of the trailer, when in a collapsed condition, is substantially not greater than half the width of the trailer in an extended condition.

The invention will now be more particularly described, by way of example, with reference to the accompanying drawings in which:

Figure 1 is a side view of one embodiment of a trailer according to the invention, in an erected condition;

Figure 2 is a plan view of the trailer in an erected condition;

Figure 3 is a front view of the trailer in an erected condition;

Figure 4 is a front view of the trailer in a partially collapsed condition;

Figure 5 is a fragmentary view showing part of the trailer of Figure 4 on an enlarged scale;

Figure 6 is a front view of the trailer in a fully collapsed condition;

Figure 7 is a fragmentary view showing part of the trailer of Figure 6 on an enlarged scale and in a collapsed condition,

Figure 8 is a fragmentary view showing a central part of the end of the trailer in greater detail.

Figure 9 is a fragmentary sectional view in a transverse plane above a wheel location, and

Figure 10 is a fragmentary end view of the trailer showing a further detail.

Referring to the drawings, the trailer shown therein comprises a body 10, two ground engageable wheels 11 and a tow bar 12 for connecting the trailer to a road vehicle, particularly a car.

The body 10 comprises a base 13, two side members in the form of side walls 14 and two end members in the form of end walls 15.

The base 13 is formed in two parts 13a and 13b, each of which is independently hinged to the tow bar 12 which not only projects forwardly in a swan neck from the body 10 but also extends the entire length of the body 10. Each base part 13a, 13b is also connected to an adjacent side wall 14 by hinges so that the base parts 13a and 13b can be folded upwards between the side walls 14 as shown in Figures 4 and 5.

The wheels 11 are mounted for rotation on stub axles 16 which are secured to the lower edges of respective side walls 14 so that as the trailer is collapsed by folding the base parts 13a and 13b between the side walls 14, the wheels remain in substantially parallel spaced planes thus enabling the trailer to be wheeled along the ground in both an erected and a collapsed condition.

The end walls 15 are releasably connected to the base 13 and the side walls 14 when the trailer is in an erected condition to retain the two parts 13a and 13b of the base in co-planar relationship and to keep the side walls 14 perpendicular to the base 13. To this end, each end wall 15 may have hooks 17 which depend from its lower edge and which co-operate with journal pins 18 supported by the base 13 to allow the end wall to pivot relative to the base 13 between a raised position in which it closes its respective end of the trailer and a lowered position in which said one end of the trailer is open. Each end wall may also have two laterally projecting lugs 19 having apertures therein for co-operating with pins 20 which project from opposite ends of the side walls 14. When the end walls 15 are in a raised position with the pins 20 passing through the apertures in respective lugs 19, the end walls can be maintained in this position by placing pegs 21 through transverse holes provided in the pins 20 or by pivotable latch members 32 (see Figure 10) provided on the pins 20.

Mud guards 22 are provided on the side walls over the wheels 13 and a light fitting 23 is fitted to the rear end wall 15.

The base 13, side walls 14 and end walls 15 are made, for example, of wood or aluminium or of wood with an aluminium covering and are strengthened by metal framework structures 24. As shown in Figures 8 - 10, the framework structure 24 of the base 13 includes framework members 25 which extend transversely of each base part 13a, 13b at each end thereof and at a position midway between their ends. Brackets 26 are connected to the inner ends of these members 25 and these brackets are pivotably connected to lugs 27 depending from the tow bar 12. The base parts

13a, 13b overhang respective brackets 26 so that when the two base parts 13a and 13b are coplanar, the base parts overlie the tow bar 12 to give the base 13 added rigidity. L-shaped brackets 33 are connected to the outer ends of the framework members 25 and framework members 28 on the side walls 14 are pivotably connected to these brackets 27. A latching device 29 is provided between the bracket 33 on each central framework member 25 and each central framework member 28 on the side walls 14 to latch the base parts and side walls in an erected condition, each latching device 29 being provided with a release lever 30 which is urged by a spring 31 towards a latched position.

In order to collapse the trailer from an erected condition, the end walls 15 are removed and the two base parts 13a and 13b are folded upwardly between the side walls 14. Straps 24 can then be placed across each end of the collapsed trailer between pins 21 to hold the trailer in a collapsed condition. The end walls 15 can be slotted between respective side walls and an adjacent base part 13a, 13b, as shown in Figure 5.

Typically, the width of the trailer in an erected condition is about 122cm and the width of the trailer in a collapsed condition is about 60cm. This will enable a trailer, in a collapsed condition, to be stored more easily as it will pass with ease through an average door and it will also make it more practical for retail outlets to sell these trailers as they will occupy less space.

The base 13, side walls 14 and end walls 15 may be made of any

appropriate material, for example, wood or aluminium.

The embodiment described above is given by way of example only and various modifications will be apparent to persons skilled in the art without departing the from the scope of the invention.

CLAIMS

1. A road vehicle trailer comprising a body, at least two ground engageable wheels and means for connecting the trailer to a road vehicle, the body comprising a base, two side members extending in the intended direction of movement of the trailer and at least one end member extending between the two side members wherein the side members are pivotable relative to the base member and the base member is formed in two parts pivotable relative to one another so that the two parts of the base member can be folded to lie, at least in part, between the two side members.

2. A road vehicle trailer as claimed in claim 1, wherein the two side members and the two parts of the base lie in substantially parallel planes when the trailer is in a collapse condition.

3. A road vehicle trailer as claimed in claim 1 or claim 2, wherein at least one end member is releasably connectible to the base and the side members to support the trailer in an erected condition with the two parts of the base coplanar or substantially coplanar and the two side members in planes perpendicular or substantially perpendicular to the base.

4. A road vehicle trailer as claimed in any one of the preceding claims, wherein there are two end members releasably connectible to the base and side members.

5. A road vehicle trailer as claimed in claim 4, wherein at least one of the end members is pivotable relative to the base member between a raised position in which it closes one end of the trailer and a lowered position in which said one end of the trailer is open.

6. A road vehicle trailer as claimed in any one of the preceding claims, wherein the means for connecting the trailer to a road vehicle comprises a tow bar which extends forwardly from one end of the trailer.

7. A road vehicle trailer as claimed in claim 6, wherein the tow bar also extends substantially the length of the trailer and the two base parts are independently pivotably connected to the tow bar.

8. A road vehicle trailer as claimed in any one of the preceding claims, wherein the ground engageable wheels lie in two spaced apart, substantially parallel, planes both when the trailer is in an erected condition and a collapsed condition.

9. A road vehicle trailer as claimed in any one of the preceding claims, wherein the or each end member can be stored between a side member and an adjacent base part when the trailer is in a collapsed condition.

10. A road vehicle trailer as claimed in any one of the preceding claims, wherein means are provided for connection between the two side members to releasably hold the trailer in a collapsed condition.

11. A road vehicle trailer as claimed in any one of the preceding claims, wherein the width of the trailer, when a collapsed condition, is substantially not greater than half the width of the trailer in an extended condition.

12. A road vehicle trailer substantially as hereinbefore described with reference to the accompanying drawing.

The Patent Office

Application No:	GB 9517672.3	**Examiner:**	J. C. Barnes-Paddock
Claims searched:	1-12	**Date of search:**	19 October 1995

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.N): B7B (BTF2)

Int Cl (Ed.6): B62D 63/06

Other:

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X,Y	GB2132570A	(SHAW & SMITH)	X:1,2,6,8,9,11 Y:7
X	GB713638A	(TORRANCE)	1
X	US4768806	(TETREAULT); Col 1, Para 4	1
Y	US4175768	(STOW-A-WAY TRAILERS LTD)	7

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

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Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

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Int Cl (Ed.6): B62D 63/06

Other:

Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X,Y	GB2132570A	(SHAW & SMITH)	X:1,2,6,8,9,11 Y:7
X	GB713638A	(TORRANCE)	1
X	US4768806	(TETREAULT); Col 1, Para 4	1
Y	US4175768	(STOW-A-WAY TRAILERS LTD)	7

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
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